

# Temozolomide for central neurocytoma

An institutional review board-approved, chart review of patients seen at the [Duke University Hospital, Durham](#), resulted in a single case treated with [chemotherapy](#). They proceeded with a comprehensive literature review and identified 18 citations, representing 39 cases of adult and pediatric CN treated with chemotherapy. With the addition of a single case, the total number of recurrent [central neurocytoma](#) (CN) patients treated with temozolomide (TMZ) was nine. There exists marked heterogeneity in chemotherapy used to treat CN. TMZ is incorporated into treatment regimens in the setting of tumor recurrence: its role merits further study <sup>1)</sup>.

Mozes et al. reported a good tumor response and symptom relief with repeated radiation and temozolomide chemotherapy <sup>2)</sup>.

One patient with a neurocytoma had stable disease for 19 months, in a pediatric phase I and pharmacokinetic study of erlotinib followed by the combination of erlotinib and temozolomide: a Children's Oncology Group Phase I Consortium Study <sup>3)</sup>.

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A 58-year-old man presented with a 4-month history of headache and unilateral facial and distal extremity paresthesia. Magnetic resonance imaging (MRI) scans demonstrated a 2.6 x 2.2-cm ring-enhancing cystic mass in the right pons.

MRI-guided stereotactic biopsy yielded a diagnosis of atypical neurocytoma. Because of the location and malignant histological features of the tumor, the patient was initially treated with external beam radiation therapy. Several months later, MRI scans demonstrated tumor progression. The patient then underwent three rounds of temozolomide chemotherapy, during and after which his symptoms worsened. Aggressive subtotal resection of the tumor was achieved via a right suboccipital craniectomy.

Twenty-eight months postoperatively, the patient is symptom free, and MRI scans demonstrate no evidence of residual or recurrent tumor <sup>4)</sup>.

<sup>1)</sup>

Johnson MO, Kirkpatrick JP, Patel MP, Desjardins A, Randazzo DM, Friedman HS, Ashley DM, Peters KB. The role of chemotherapy in the treatment of central neurocytoma. *CNS Oncol*. 2019 Nov 1;8(3):CNS41. doi: 10.2217/cns-2019-0012. Epub 2019 Nov 5. PubMed PMID: 31686534.

<sup>2)</sup>

Mozes P, Szanto E, Tiszlavicz L, Barzo P, Cserhati A, Fodor E, Hideghety K. Clinical course of central neurocytoma with malignant transformation-an indication for craniospinal irradiation. *Pathol Oncol Res*. 2014 Apr;20(2):319-25. doi: 10.1007/s12253-013-9697-y. Epub 2013 Oct 12. PubMed PMID: 24122623.

<sup>3)</sup>

Jakacki RI, Hamilton M, Gilbertson RJ, Blaney SM, Tersak J, Krailo MD, Ingle AM, Voss SD, Dancey JE, Adamson PC. Pediatric phase I and pharmacokinetic study of erlotinib followed by the combination of erlotinib and temozolomide: a Children's Oncology Group Phase I Consortium Study. *J Clin Oncol*. 2008 Oct 20;26(30):4921-7. doi: 10.1200/JCO.2007.15.2306. Epub 2008 Sep 15. PubMed PMID: 18794549; PubMed Central PMCID: PMC2652086.

<sup>4)</sup>

Swinson BM, Friedman WA, Yachnis AT. Pontine atypical neurocytoma: case report. *Neurosurgery*. 2006 May;58(5):E990; discussion E990. PubMed PMID: 16639306.

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